

Remarks

Upon entry of the foregoing amendment, claims 1-4, 8-9, and 13-22 are pending in the application, with claims 1, 9, 13, 14, 16, and 21 being the independent claims.

Upon the foregoing amendment: claims 1, 9, 13, 14, and 16 are amended; claims 17-22 are added; and claim 12 is cancelled without prejudice to, or disclaimer of, the subject matter therein. These changes are believed to introduce no new matter, and their entry is respectfully requested. The Applicants thank the Examiner for allowance of claim 16.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102

At paragraphs 3 and 4 of the Office Action, claims 1, 8, and 12 are rejected under 35 U.S.C. § 102(e) as being allegedly unpatentable over U.S. patent number 6,459,721 to Mochizuki *et al.* (hereinafter "Mochizuki"). Applicants respectfully traverse this rejection based on the discussion below.

Claim 1, as amended, recites:

A method for *down-converting and de-spreading* a received spread spectrum signal, comprising the steps of:

- (1) receiving the spread spectrum signal *having a center frequency that is above baseband*; and
- (2) sampling the received spread spectrum signal according to a control signal resulting in a de-spread baseband signal, wherein said control signal includes a spreading code corresponding to said received spread spectrum signal, *said control signal having a center frequency that is selected so as to down-convert said received spread spectrum signal to baseband during said sampling step.*

(See claim 1, *emphasis added*)

In sum, claim 1 recites a method of *down-converting and de-spreading* a received spread spectrum signal, where the down-conversion and spreading are performed in a single sampling step. In order to do so, the control signal includes the spreading code corresponding to the received spread spectrum signal, and also has a center frequency that is selected so as to down-convert the received spread spectrum signal to baseband during the sampling step.

In contrast, Mochuzuki, performs de-spreading separate from down-conversion. For instance, FIG. 1 in Mockuzuki clearly separates the quasi-base band conversion circuit 6A from the demodulator 7A, where the code generator 4B generates a spreading code that is only coupled to the demodulator 7A and not to the quasi-base band conversion circuit 6A. FIG. 2 in Mockuzuki further defines the quasi-base band conversion circuit 6A having quadrature mixers driven by a local oscillator 201 to produce I and Q baseband channels at the output of low pass filters 205 and 206. FIG. 3A further defines the demodulator 7A as receiving the I and Q channels from the circuit 6A and combining the I and Q channels with the spreading code from code generator 2436 in the multipliers 2431I and 2431Q. Accordingly, the local oscillator 201 (FIG.2) of Mockuzuki that performs down-conversion does not include the spreading code from the code generator 2436 (FIG. 3A), as is apparent from FIGs. 2 and 3a. Accordingly, Mockuzuki does not teach or suggest a control signal that includes a spreading code corresponding to the received spread spectrum signal, *and also having a center frequency that is selected so as to down-convert said received spread spectrum signal to baseband*, as recited in Applicants' claim 1.

Based on the discussion above, Mockuzuki does not teach each and every feature of amended claim 1. Accordingly, Applicants request that amended claim 1 and its respective dependent claims (including claims 8 and 12) be passed to allowance.

Rejections under 35 U.S.C. § 103

At paragraphs 5 and 6, the Office Action indicates that claims 2-4, 13, and 15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mochizuki.

Claims 2-4 depend from amended claim 1, and are allowable over Mochizuki for the reasons cited above.

Independent claim 13 has been amended so that the (sampling) control signal carries a spreading-code and has a center frequency determined so as to down-convert the spread spectrum signal to a lower frequency signal. As discussed above, Mockizuki does not teach a control signal having both of these features since down-conversion is performed separately from de-spreading in Mockizuki. Accordingly, Mochizuki does not teach or suggest each and every feature of claim 13, and therefore does not meet the requirements of *prima facie* obviousness. Accordingly, Applicants request that the rejection of claim 13 be removed, and that this claim and its respective dependent claims be passed to allowance.

Claims 9 and 14

Claims 9 and 14 were objected to as being dependent upon a rejected base claim, but were indicated to contain allowable subject matter. Accordingly, these claims have

been rewritten in independent form. Claim 9 was also amended to remove the phrase *wherein pulses from said pulse generator have a pulse width established to improve energy transfer to the de-spread baseband signal*. This limitation was actually removed from claim 9 in the amendment filed on 6/6/01, in the claim section showing the "Version with markings to show changes made". However, the change was not implemented in the "clean version" of the claims listed in the 6/6/01 amendment. Accordingly, this amendment has been repeated for sake of clarity.

New claims

New claims 17-22 have been added herein. Claims 17-20 depend from claim 1 and are allowable for being dependent from an allowable base claim for the reasons discussed above. Independent claim 21 and dependent claim 22 are allowable for at least the same reasons as for claims 1 and 13. Accordingly, Applicants request that these claims be passed to allowance.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully
requested.

Respectfully submitted,

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